



CubeSat: High School Students Building Satellites

Merritt Island High School



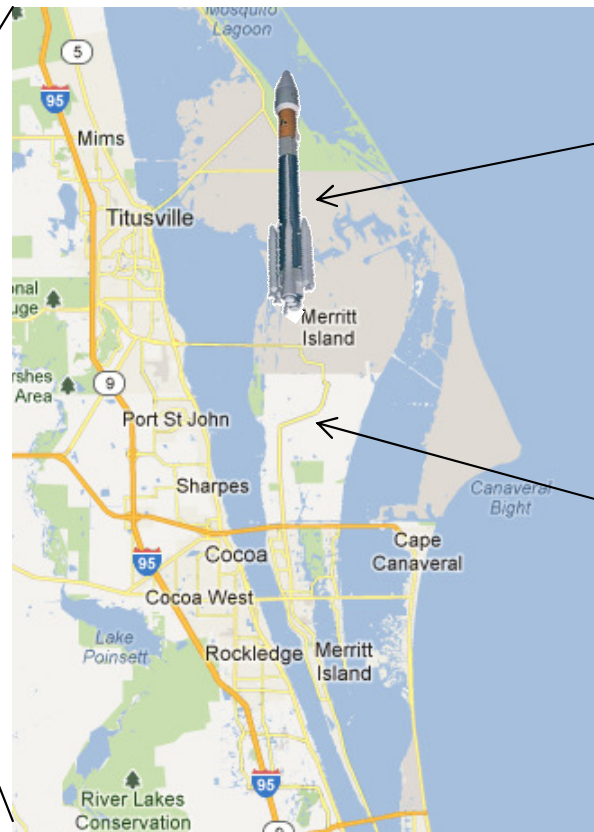
StangSat

Gurkirat Kainth & Maurisa Orona





Merritt Island High School



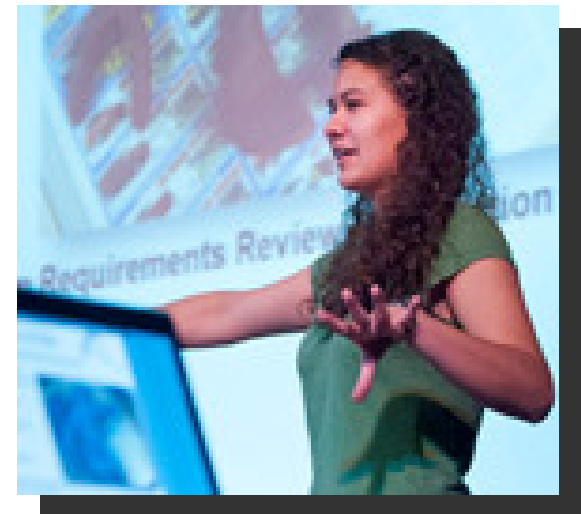
NASA Kennedy
Space Center

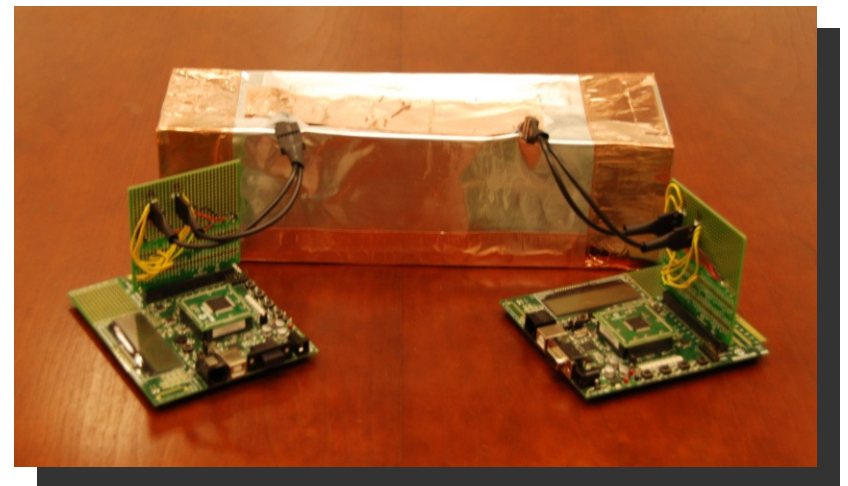
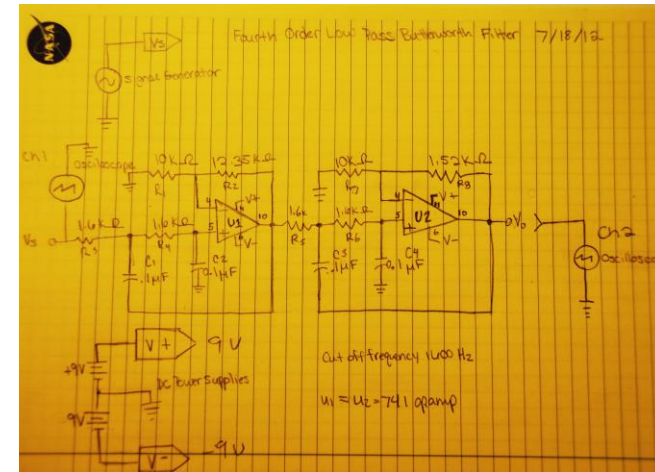
Merritt Island
High School



Experience









Stang Sat

Space Act Agreement





Why Our Mentors Mentor

“The MIHS Cubesat project is in many ways just as complex as my undergraduate engineering school senior design project was. It is an excellent multi-discipline learning opportunity for the students who chose to be a part of it.”

-Mentor R.A. Thompson

“I was drawn to help with this project because I wish I had had this kind of opportunity back in high school.... This is what STEM is all about.”

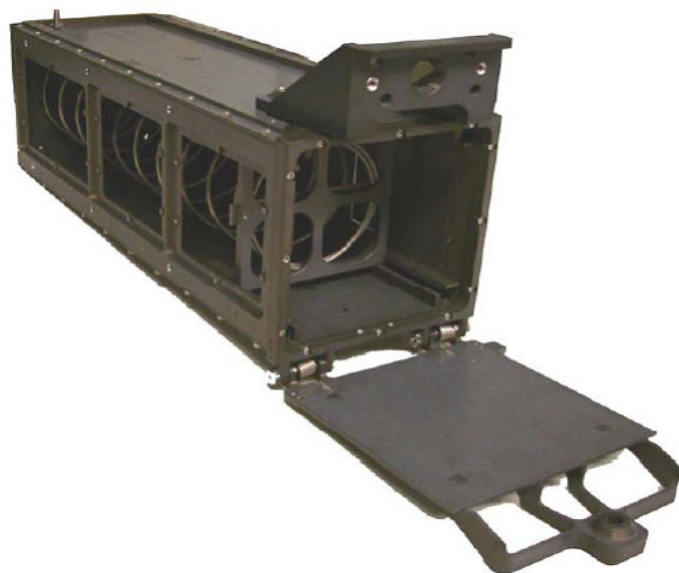
—Mentor Shaun Daly

“I've never done what the students are doing, even as a Satellite Mission Manager. I want to inspire the next generation.”

-Teacher Sponsor Tracey Beatovich



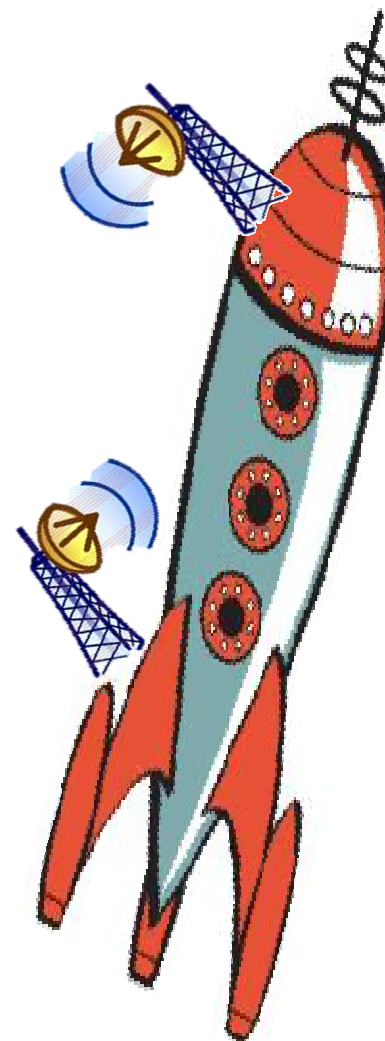
Quantify Flight Environment

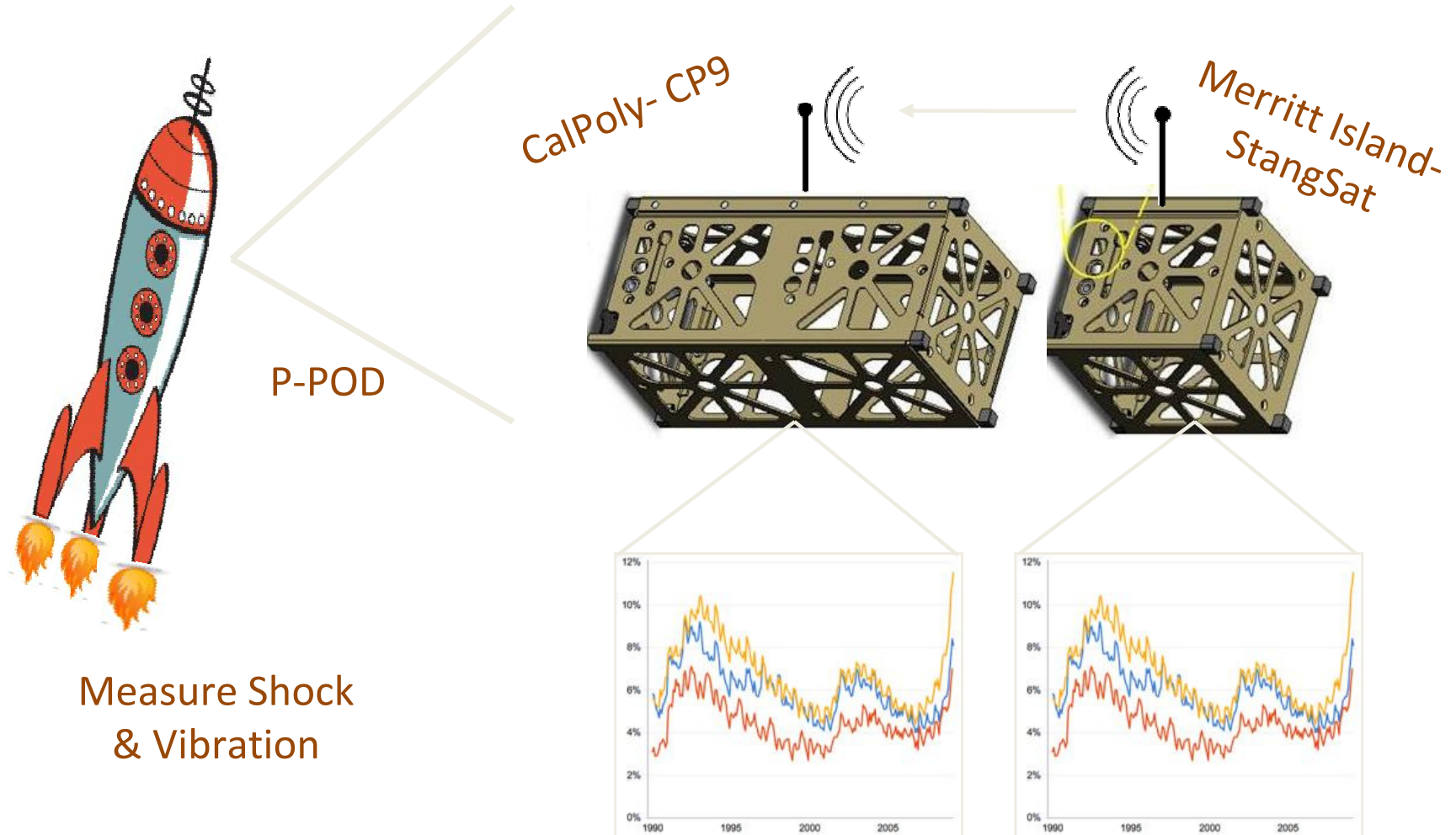


Separation
Dynamics



RF Transmission

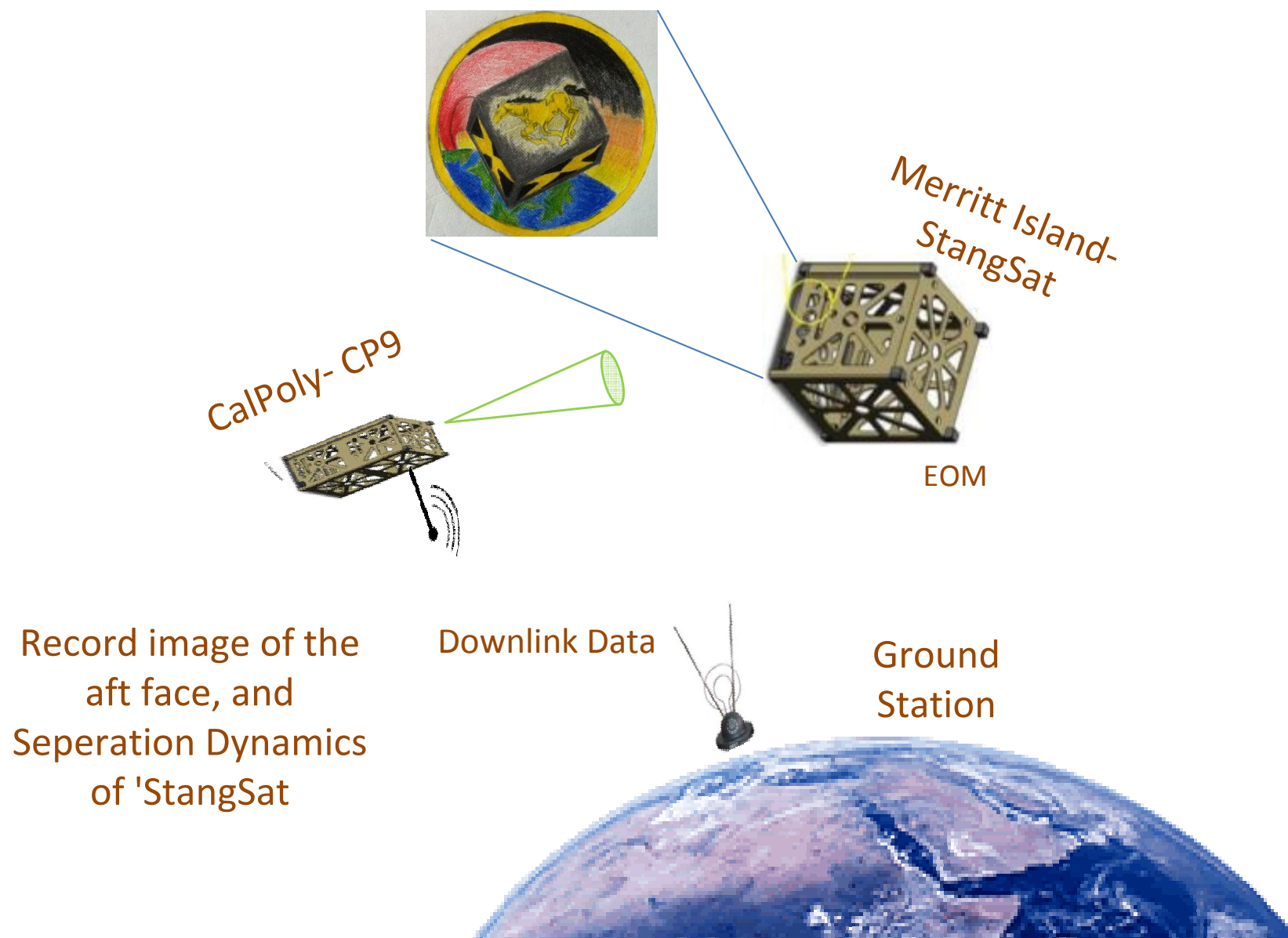


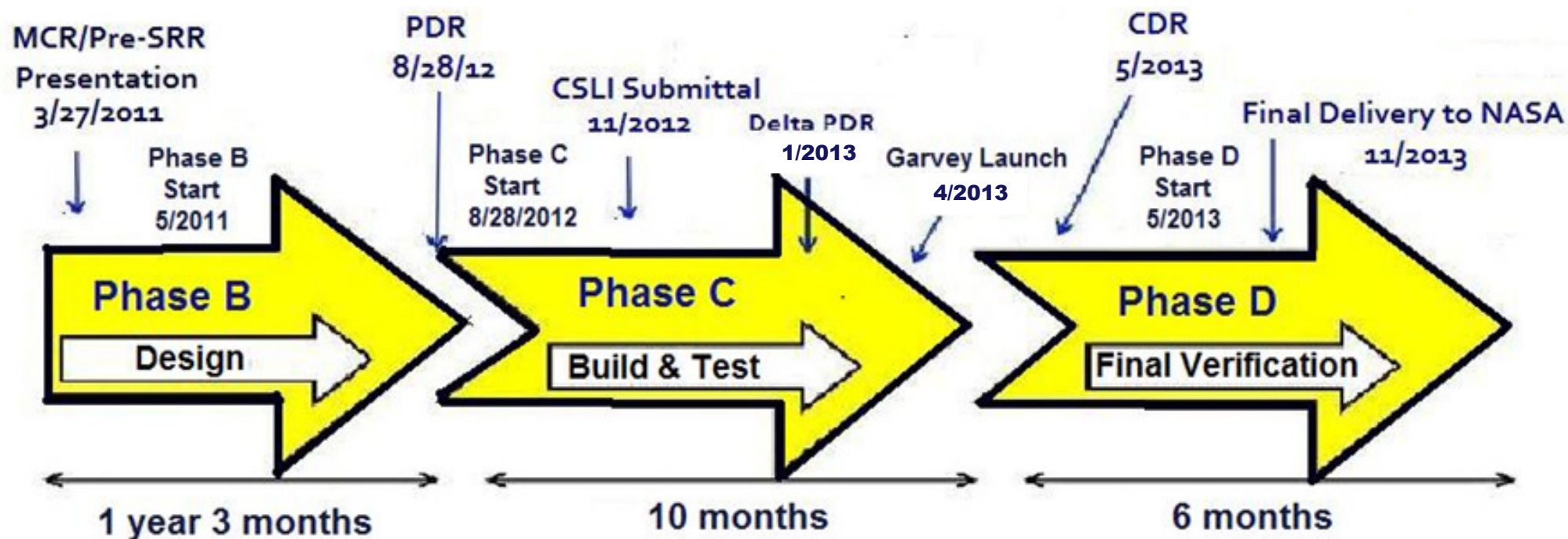




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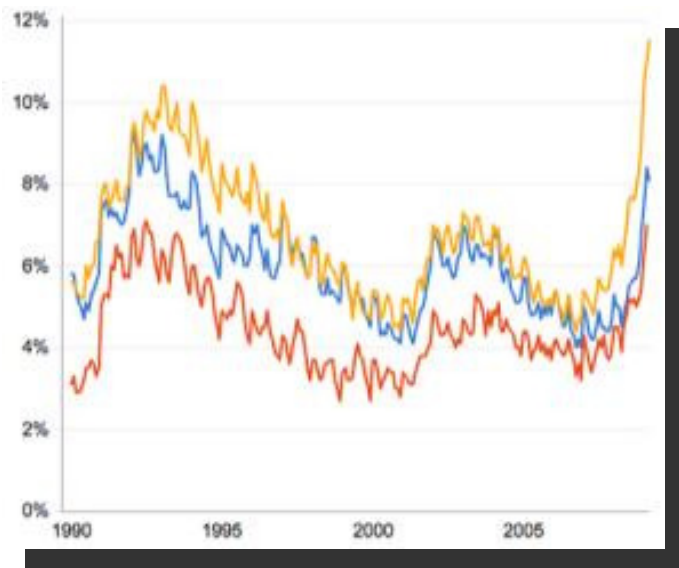
Concept of Operations







Reasonable Shock Levels



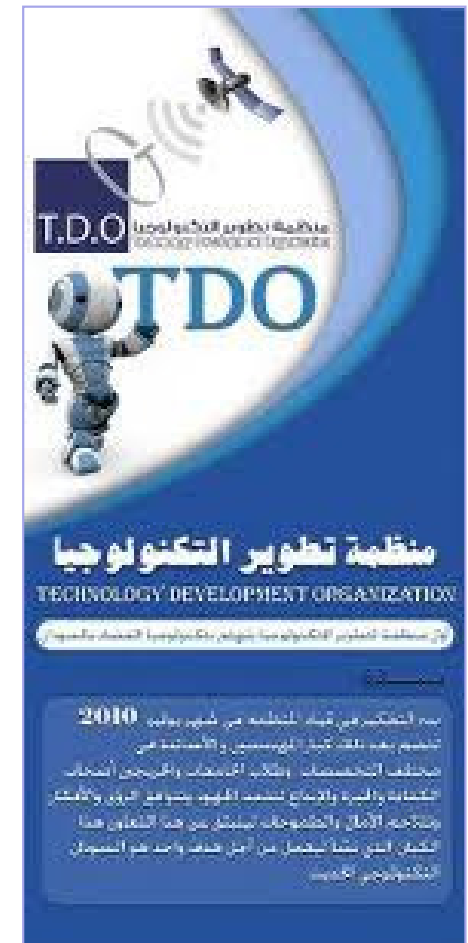
Future CubeSat Teams



**Mount Carmel High
School Amateur
Radio Club**



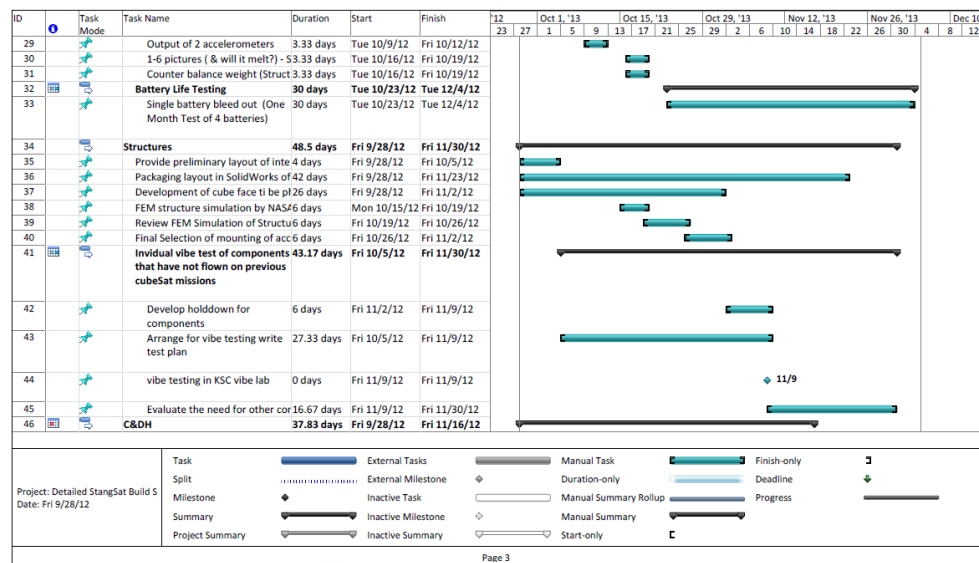
University of Madrid





We are partnered with
California Polytechnic State
University





Requirements



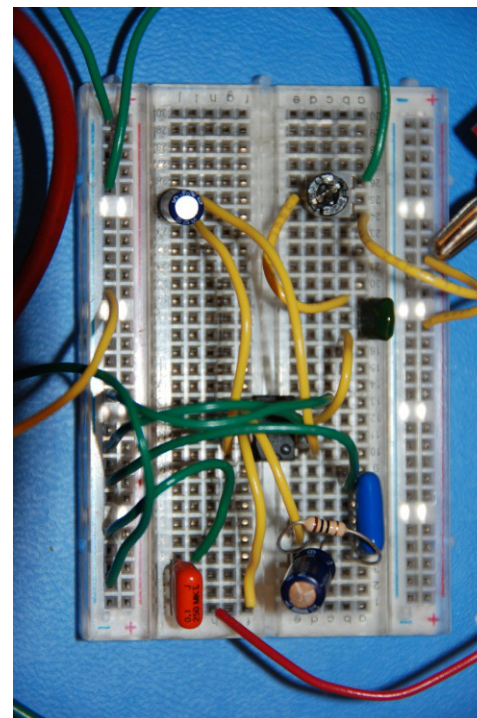
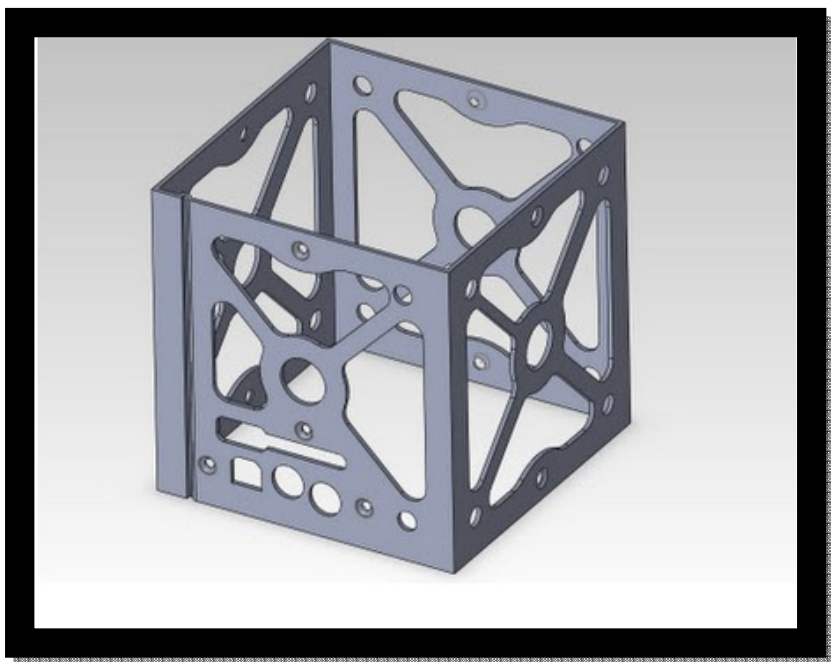
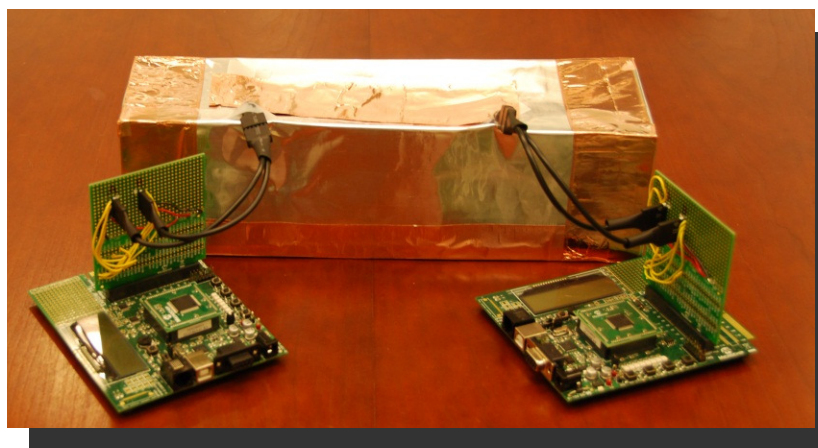
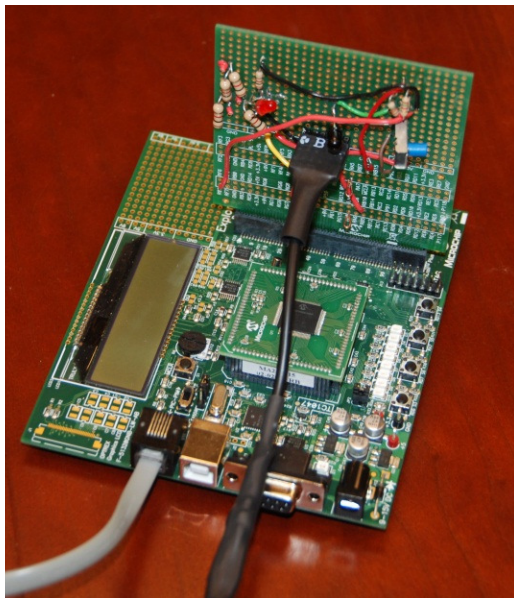
Level Description

1. Education Expectations & Outcomes
Document #: **In-Work**, Signed & Dated: **TBD**
2. Calpoly CubeSat Design Specification
Document#: Rev. 12, Signed & Dated: 8/1/09
3. Requirements Matrix – From Launch Services Program (KSC-Sat1)
Document#: "The Matrix", Dated: 11/29/10

Requirements to be added in the future:

4. CubeSat to P-POD ICD
Document#: 1.0.A.72.01, Signed & Dated: 6/29/10
Note 1: Additional updates will soon be made to include the following requirements:
 - Ability to have the 1U CubeSat powered during ascent,
 - Ability to have the 1U CubeSat transmit wirelessly inside the P-POD,
 - Random Vibration Profiles and Duration along with Shock Profile and Test Specifications (these will be obtained from a NASA document (GEVS) and added as an appendix to the P-POD ICD).
 Note 2: Applicable Documents (within the P-POD ICD)
 - KSC mentors will further help Merritt Island in determining applicable sections.
5. 2U to 1U ICD
– Document#: **TBD**, Signed & Dated: **Most likely early 2012**

External CP9 Document
CTS-CS Interface Control Document
PolySat
California Polytechnic State University

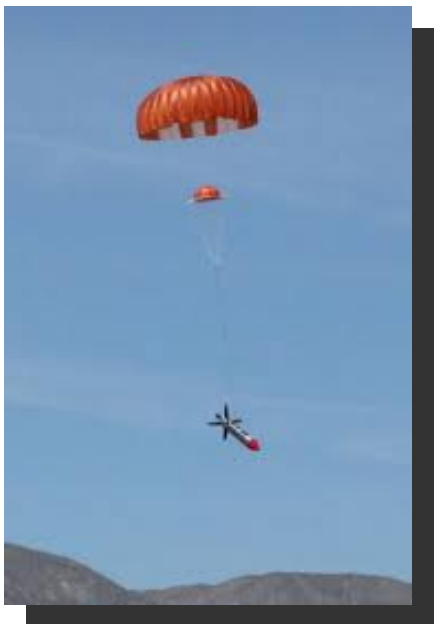






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The Future – Garvey Test Flight





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Contributing Organizations



LOCKHEED MARTIN



*Florida Institute
of Technology*

of Technology



Please see one of our team members
if you or your organization is
interested in supporting our group
financially.

Any help is much appreciated!